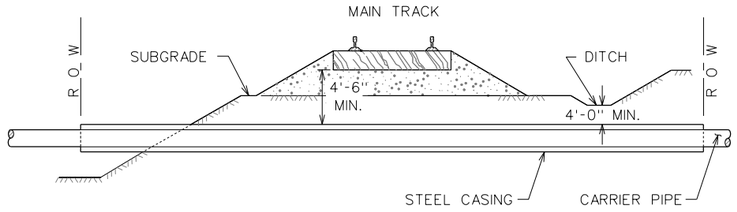


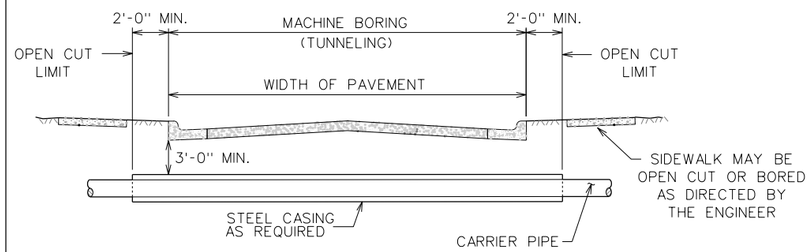
MACHINE BORING
(TUNNELING IN EMBANKMENT)

MACHINE BORING
(TUNNELING IN CUT)

NOTE:
1. FOR MORE INFORMATION ON WATER AND SEWER LINE CROSSING SEE CITY STANDARD SPECIFICATION FOR WATER AND SEWER LINE CONSTRUCTION.
2. STEEL CASING SHALL BE A MINIMUM THICKNESS OF 1/2 INCH.
3. DRY BORING IS REQUIRED.

TYPICAL RAILROAD CROSSING

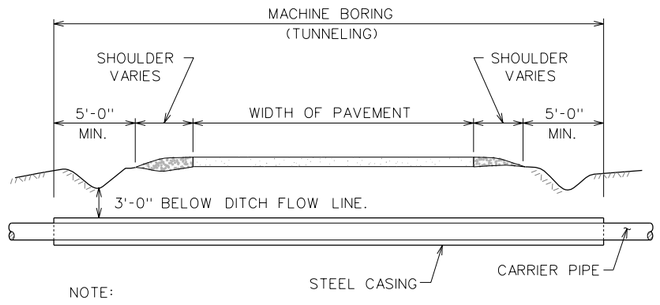
W4-00



NOTE:
1. FOR MORE INFORMATION ON WATER AND SEWER LINE CROSSING SEE CITY STANDARD SPECIFICATION FOR WATER AND SEWER LINE CONSTRUCTION.
2. STEEL CASING SHALL BE A MINIMUM THICKNESS OF 3/8 INCH.
3. DRY BORING PREFERRED, WET BORING ALLOWED ONLY WHEN APPROVED BY THE CITY ENGINEER.

TYPICAL CITY STREET CROSSING

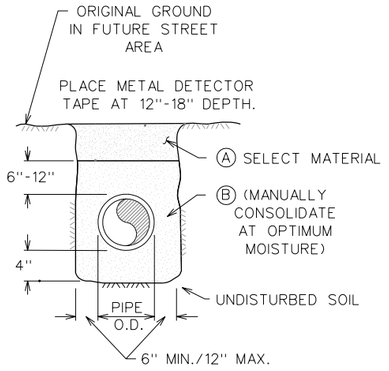
W4-01



NOTE:
1. FOR MORE INFORMATION ON WATER AND SEWER LINE CROSSING SEE CITY STANDARD SPECIFICATION FOR WATER AND SEWER LINE CONSTRUCTION.
2. STEEL CASING SHALL BE A MINIMUM THICKNESS OF 3/8 INCH.
3. DRY BORING IS REQUIRED.

TYPICAL STATE HIGHWAY OR MAIN THOROUGHFARE CROSSING

W4-02



Ⓐ SELECT MATERIAL
MATERIAL EXCAVATED FROM THE DITCH, (WHICH IS FREE OF ROCKS, LUMPS, CLODS, OR DEBRIS LARGER THAN TWO (2) INCHES IN THE LARGEST DIMENSION), COMPACTED TO A MINIMUM OF 90% OF MAXIMUM DENSITY AS DETERMINED BY ASTM D698 (STANDARD) AT A MOISTURE CONTENT WITHIN OPTIMUM TO +4% OF OPTIMUM UNDER NON-STRUCTURAL AREAS (ie...YARDS, PASTURES, EASEMENTS) AND TO A MINIMUM OF 98% OF MAXIMUM DENSITY AS DETERMINED BY ASTM D698 (STANDARD) AT A MOISTURE CONTENT WITHIN OPTIMUM TO +4% OF OPTIMUM UNDER FUTURE STREET AREAS.

Ⓑ GRANULAR MATERIAL
MATERIAL SHALL BE BANK RUN RIVER SAND WHICH IS FREE OF DETRIMENTAL QUANTITIES OF CLAY, DEBRIS, OR ORGANIC MATERIAL AND WHICH, WHEN TESTED BY STANDARD LABORATORY METHODS, MEET THE FOLLOWING REQUIREMENTS:

MAXIMUM LIQUID LIMIT	45
MAXIMUM PLASTICITY INDEX	15
MAXIMUM PERCENT PASSING NO. 200 SIEVE	35
MINIMUM PERCENT PASSING 3/4" SIEVE	100

THE MATERIAL SHALL BE FREE FLOWING AND WHEN WET, SHALL NOT ADHERE TO FORM A BALL WHEN PRESSED IN THE HAND.

NOTES:
1. *FOR BEDDING AND TRENCHING WITHIN EXISTING STREET/ STRUCTURAL AREAS SEE DETAILS FOR OPEN CUT STREETS.*
2. All bedding & installation of PVC pipe shall be in accordance to ANSI/AWWA Standards for PVC Pipe.
3. All bedding & installation of Ductile Iron pipe shall be in accordance to ANSI/AWWA C150/A21.50.
4. Compaction shall be attained by mechanical tamping.
5. Relative compaction shall be tested in the presence of the City Engineer.
6. Dust resulting from the Contractor's performance of the work, either inside or outside the right of way, shall be controlled by the Contractor.
7. All trenches shall be back filled and temporary paving or plating placed at the end of each working day.
8. See "Open Cut Details" ST4-00, ST4-02 & ST4-02.

BEDDING AND TRENCH FOR DI PIPE & PVC PIPE WITHIN NON-STRUCTURAL OR FUTURE STREET AREAS

W4-03

GENERAL NOTES:

ALL AREAS WHERE EXISTING VEGETATION AND GRASS COVER HAVE BEEN BARED BY CONSTRUCTION SHALL BE ADEQUATELY BLOCK SODDED OR HYDROMULCHED AND WATERED UNTIL GROWTH IS ESTABLISHED. IN DEVELOPED AREAS WHERE GRASS IS PRESENT, BLOCK SOD WILL BE REQUIRED. BARED AREAS SHALL BE SEEDED OR SODDED WITHIN 14 CALENDAR DAYS OF LAST DISTURBANCE.

APPROVED EROSION CONTROL MEASURES MUST BE INSTALLED DURING THE ENTIRE TIME THAT EARTH HAS BEEN BARED BY CONSTRUCTION AND SHALL STAY IN PLACE UNTIL ACCEPTABLE VEGETATIVE GROWTH IS ESTABLISHED AFTER CONSTRUCTION IS COMPLETE AND THEN REMOVED BY CONTRACTOR.

ALL EROSION CONTROL MEASURES SHOULD BE CLEANED OF SILT AFTER EVERY RAIN.

ESTABLISHMENT OF VEGETATION MAY BE A WARRANTY ITEM.

REVISIONS:
REVISED 12-18-03
REVISED 1-14-04
REVISED 1-23-04

BRYAN - COLLEGE STATION
STANDARD WATER DETAILS

THE CITY OF COLLEGE STATION, TEXAS

THE CITY OF BRYAN TEXAS

DRAWN BY: RH
DATE: 04-07-03
SCALE: N T S
APPROVED: W.P.K.

FIGURE:
W4

SHEET 4 OF 4